



Marine & Offshore  
Division

Certificate number: 26381/B0 BV

File number: ACE 4/853/03

Product code: 2584H

*This certificate is not valid when presented without the full attached schedule composed of 7 sections*

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## TYPE APPROVAL CERTIFICATE

*This certificate is issued to*  
**Svend Hoyer A/S**  
Hadsten - DENMARK

*for the type of product*  
**ASYNCHRONOUS MACHINES (Power below 100kW)**

MS, HMA2 & HMA3 series.  
Cage Induction Marine Motors

**Requirements:**

Bureau Veritas Rules for the Classification of Steel Ships and Offshore Units.  
IEC 60034 Series (2010).

*This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.*

**This certificate will expire on: 13 Feb 2022**

**For BUREAU VERITAS,**

At BV FREDERICIA, on 13 Feb 2017,

Jesper Jensen



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine & Offshore Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 October 2014

This certificate consists of 5 page(s)

## THE SCHEDULE OF APPROVAL

### I. PRODUCT DESCRIPTION:

The MS, HMA2 & HMA3 series are asynchronous machines for Marine and Offshore applications.

#### I.1 - Specifications:

Number of poles:	2, 4, 6, 2/4, 4/6, 4/8, 8
Power supply:	230 to 690 V 50 Hz – 60 Hz
Enclosure en cooling:	IP 55 or IP 56 - IC 411
Ambient temperature:	45°C
Duty type:	S1 to S9
Insulation class:	F or H
Temperature rise:	B or F

#### I.1.1 - Rated power at S1:

Motor type MS	kW 2 poles 50 Hz	kW 2 poles 60 Hz	kW 4 poles 50 Hz	kW 4 poles 60 Hz	kW 6 poles 50 Hz	kW 6 poles 60 Hz	kW 8 poles 50 Hz	kW 8 poles 60 Hz
56 1	0,09	0,11	/	/	/	/	/	/
56 2	0,12	0,14	0,09	0,11	/	/	/	/
63 1	0,18	0,22	0,12	0,14	0,09	0,11	/	/
63 2	0,25	0,3	0,18	0,22	0,12	0,14	/	/
63 3	0,37	0,44	0,25	0,3	/	/	/	/
71 1	0,37	0,44	0,25	0,3	/	/	0,09	0,11
71 2	0,55	0,66	0,37	0,44	/	/	0,12	0,14
71 3	0,75	0,9	0,55	0,66	/	/	/	/
71 M1	/	/	/	/	0,18	0,22	/	/
71 M2	/	/	/	/	0,25	0,3	/	/
80 1	0,75	0,9	0,55	0,66	/	/	0,18	0,22
80 2	1,1	1,32	0,75	0,9	/	/	0,25	0,3
80 3	1,5	1,8	1,1	1,32	/	/	/	/
80 M1	/	/	/	/	0,37	0,44	/	/
80 M2	/	/	/	/	0,55	0,66	/	/
90 S	1,5	1,8	1,1	1,32	0,75	0,9	0,37	0,44
90 L	2,2	2,6	1,5	1,8	1,1	1,32	0,55	0,66
90 L2	3	3,6	2,2	2,6	/	/	/	/
100 L	3	3,6	2,1	2,5	1,5	1,8	/	/
100 L1	/	/	2,2	2,6	/	/	0,75	0,9
100 L2	4	4,8	3	3,6	/	/	1,1	1,32
100 L3	/	/	4	4,8	/	/	/	/
112 M	4	4,8	4	4,8	2,2	2,6	1,5	1,8
112 M1	5,5	6,6	/	/	/	/	/	/
112 M2	/	/	5,5	6,6	/	/	/	/
132 S	/	/	5,5	6,6	3	3,6	2,2	2,6
132 S1	5,5	6,6	/	/	/	/	/	/
132 S2	7,5	9	/	/	/	/	/	/
132 M	/	/	7,5	9	/	/	3	3,6
132 M1	9,2	11	/	/	4	4,8	/	/
132 M2	11	13,2	7,3	8,7	5,5	6,6	/	/
132 M3	/	/	11	13,2	/	/	/	/
160M1	11	13,2	11	13,2	7,5	9	4	4,8
160M2	15	18	/	/	/	/	5,5	6,6
160L	18,5	22,2	15	18	11	13,2	7,5	9
180M	22	26,4	18,5	22,2	/	/	/	/
180L	/	/	22	26,4	15	18	11	13,2

\* : The power indicated in this table can be modified according to ambient temperature and duty type dedicated to the motor

Note: Power stated in the table above is power for S1 duty, power at S1 duty can be altered +- 20 %. Motors used for short time duty (S2, S3,S6) power is to be rated in accordance with manufacturer's instructions. Motor type is suitable for following build in units: brakes, external fans, encoders.



**1.2 - Three phase Cage Induction Marine Motors - IE2 Type HMA2:****1.2.1 - Rated power at S1:**

Motor type HMA2	kW 2 poles 50 Hz	kW 2 poles 60 Hz	kW 4 poles 50 Hz	kW 4 poles 60 Hz	kW 6 poles 50 Hz	kW 6 poles 60 Hz	kW 8 poles 50 Hz	kW 8 poles 60 Hz
56 1	0,09	0,10	0,06	0,07	/	/	/	/
56 2	0,11	0,14	0,09	0,10	/	/	/	/
63 1	0,17	0,21	0,12	0,14	0,09	0,10	/	/
63 2	0,24	0,29	0,17	0,21	0,12	0,14	/	/
71 1	0,36	0,43	0,24	0,29	0,17	0,21	/	/
71 2	0,53	0,64	0,36	0,43	0,24	0,29	/	/
80 1	0,73	0,87	0,53	0,64	0,36	0,49	/	/
80 2	1,1	1,3	0,73	0,87	0,53	0,73	/	/
80 M1	/	/	/	/	/	/	0,17	0,24
80 M2	/	/	/	/	/	/	0,24	0,33
90 S	1,5	1,7	1,1	1,3	0,73	0,87	0,36	0,49
90 L	2,1	2,5	1,5	1,7	1,1	1,3	0,53	0,73
100L	2,9	3,5	/	/	1,5	1,7	/	/
100 L1	/	/	2,1	2,5	/	/	0,73	0,87
100 L2	/	/	2,9	3,5	/	/	1,1	1,3
112M	/	/	/	/	/	/	1,5	1,7
112 M1	/	/	/	/	2,1	2,5	/	/
112 M2	3,9	4,7	3,9	4,7	/	/	/	/
132S	/	/	5,3	6,4	2,9	3,5	2,1	2,5
132 S1	5,3	6,4	/	/	/	/	/	/
132 S2	7,3	8,7	/	/	/	/	/	/
132 M	/	/	/	/	/	/	2,9	3,5
132 M1	/	/	/	/	3,9	4,7	/	/
132 M2	/	/	7,3	8,7	5,3	6,4	/	/
160M1	10,7	12,8	10,7	12,8	7,3	8,7	3,9	4,7
160M2	14,6	17,5	/	/	/	/	5,3	6,4
160L	18	21,5	14,6	17,5	10,7	12,8	7,3	8,7
180M	21,3	25,6	18	21,5	/	/	/	/
180L	/	/	21,3	25,6	14,6	17,5	10,7	12,8

\* : The power indicated in this table can be modified according to ambient temperature and duty type dedicated to the motor

Note: Power stated in the table above is power for S1 duty, power at S1 duty can be altered +/- 20 %. Motors used for short time duty (S2, S3,S6) power is to be rated in accordance with manufacturer's instructions. Motor type is suitable for following build in units: brakes, external fans, encoders.

**1.3 - Three phase Cage Induction Marine Motors - IE3 Type HMA3:****1.2.1 - Rated power at S1:**

Motor type HMA3	kW 2 poles 50Hz	kW 2 poles 60Hz	kW 4 poles 50Hz	kW 4 poles 60Hz	kW 6 poles 50Hz	kW 6 poles 60Hz
HMA3 56 2	0.12	0.14	/	/	/	/
HMA3 63 1	0.18	0.22	0.12	0.14	/	/
HMA3 63 2	0.25	0.30	0.18	0.22	0.12	0.14
HMA3 71 1	0.37	0.44	0.25	0.30	0.18	0.22
HMA3 71 2	0.55	0.66	0.37	0.44	0.25	0.30
HMA3 80 1	0.75	0.9	0.55	0.66	0.37	0.44
HMA3 80 2	1.1	1.32	0.75	0.9	0.55	0.66
HMA3 90S	1.5	1.8	1.1	1.32	0.75	0.9
HMA3 90L	2.2	2.6	1.5	1.8	1.1	1.32
HMA3 100L	3	3.6	/	/	1.5	1.8
HMA3 100L1	/	/	2.2	2.6	/	/
HMA3 100L2	/	/	3	3.6	/	/
HMA3 112M	4	4.8	4	4.8	2.2	2.6
HMA3 132S	/	/	5.5	6.6	3	3.6
HMA3 132S1	5.5	6.6	/	/	/	/
HMA3 132S2	7.5	9	/	/	/	/
HMA3 132M	/	/	7.5	9	/	/
HMA3 132M1	9.2	11	/	/	4	4.8
HMA3 132M2	11	13	9.2	11	5.5	6.6
HMA3 160M	/	/	11	13.2	/	/
HMA3 160M1	11	13.2	/	/	/	/
HMA3 160M2	15	18	/	/	/	/
HMA3 160L	18.5	22.2	15	18	/	/

\* : The power indicated in this table can be modified according to ambient temperature and duty type dedicated to the motor  
 Note: Power stated in the table above is power for S1 duty, power at S1 duty can be altered +/- 20 %. Motors used for short time duty (S2, S3,S6) power is to be rated in accordance with manufacturer's instructions. Motor type is suitable for following build in units: brakes, external fans, encoders.

**2. DOCUMENTS AND DRAWINGS:**

Out-line drawings N° HMA2 112 M1 - B3

HMA2 IE2 Motor list Feb 2012

Hoyer motors catalogue Ver.3 2008 (EFF2) and catalogue 2011 (IE2)

**For B1 version:**

Drawing ref. 90090, dated 10.Sep.2014.

Drawing ref. 90176, dated 25.Sep.2014.



**3. TEST REPORTS:**

Type test report HMA2 112 M1-2 N° 112-A10241-01

Test report for degree of protection WJ10-290 dated 2010-1-15 and WM09-0193 dated 2007-06-01

**For B1 version:****Hoyer motors:**

- Test report ref. HMC3315M4-A, dated 18.Jun.2015.
- Test report ref. HMC3280S6-A, dated 18.Jun.2015.
- Test report ref. HMC3160M22-A, dated 18.Jun.2015.
- Test report ref. HMC3315L12, dated 18.Jun.2015.
- Test report ref. HMC3315L16-A, dated 18.Jun.2015.
- Test report ref. HMC3250M4-A, dated 18.Jun.2015.
- Test report ref. QR/AEC130014A, dated 04.Apr.2014.
- Test report ref. 20140709-0001, dated 04.Dec.2014

**4. APPLICATION / LIMITATION:**

4.1 - Application / Limitation of use

According to BV Rules for the Classification of Steel Ships and Offshore Units.

4.2 - On board installation & Maintenance requirements

According to BV Rules for the Classification of Steel Ships and Offshore Units.

**5. PRODUCTION SURVEY REQUIREMENTS:**

5.1 - The above motors are to be supplied by **Svend Hoyer A/S** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **Svend Hoyer A/S** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

**6. MARKING OF PRODUCT:**

Name plate according to IEC 60034-1

**7. OTHERS:**

7.1 - It is **Svend Hoyer A/S** responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the type approval certificate N°26381/A3 BV issued on 19.Aug.2015. by Bureau Veritas.

\*\*\* END OF CERTIFICATE \*\*\*